

10. (New) The display of claim 9, wherein respective regions of the semiconductor film located on both sides of the channel region below and covered by the signal wiring serve as a source region and a drain region of the thin film transistor.

11. (New) The display of claim 10, wherein a region of the semiconductor film located below and covered by the auxiliary capacitance wiring serves as an auxiliary capacitance region.

12. (New) The display of claim 9, wherein the semiconductor film is entirely covered by respective parts of the signal wiring, the gate wiring, the auxiliary capacitance wiring and the lead electrode.

REMARKS

This is in response to the Office Action dated September 26, 2002. New claims 9-12 have been added. Thus, claims 1-12 are pending. Attached hereto is a marked-up version of the changes made to the claim(s) by the current amendment. The attached page(s) is captioned "**Version With Markings To Show Changes Made.**"

Claims 5-6 stands rejected under 35 U.S.C. Section 112, second paragraph. It is respectfully submitted that any potential issue in this regard has been addressed and resolved herein.

Claim 1 stands rejected under 35 U.S.C. Section 102(e) as being allegedly anticipated by Dohjo (US 6,078,366). This Section 102(e) rejection is respectfully traversed for at least the following reasons.

Claim 1 requires "a semiconductor thin film is formed for a pixel electrode below and so as to be entirely covered by respective parts of the signal wiring, the gate wiring, the auxiliary capacitance wiring and the lead electrode, a region of the semiconductor thin film located below and entirely covered by the signal wiring and below and at least partially covered by the gate wiring serves as a channel region of the thin film transistor, regions of the semiconductor thin film located on both sides of the channel region below the signal wiring serve as a source region and a drain region of the thin film transistor respectively, and a region of the semiconductor thin film located below the auxiliary capacitance wiring serves as an auxiliary capacitance electrode region." In other words, claim 1 requires that the semiconductor thin film which functions as a channel of the transistor is entirely covered by light-shading material of the signal line, and is also at least partially covered by the light-shading gate wiring. For example, Fig. 1 of the instant application illustrates that TFT channel region 2a of semiconductor film 2 is entirely covered by a light-shading signal line 7 and is also at least partially covered by light-shading gate wiring 4. The cited art fails to disclose or suggest the aforesaid quoted and underlined aspects of claim 1.

Dohjo, in Fig. 1, illustrates an LCD including TFTs 112, signal lines 110 connected to TFT sources, scanning lines 111 connected to TFT gates, and pixel electrodes 131. Dohjo is entirely unrelated to the invention of claim 1, in that Dohjo's

TFT channels are not entirely covered by any part of any signal line 110. In contrast, it is clear from Fig. 1 of Dohjo that the semiconductor channel of each TFT is exposed from at least one side and is not covered by any signal line 110. Thus, Dohjo cannot possibly meet the requirement of claim 1 that "a region of the semiconductor thin film located below and entirely covered by the signal wiring and below and at least partially covered by the gate wiring serves as a channel region of the thin film transistor." In fact, Dohjo teaches directly away from the invention of claim 1 in this respect, because in Dohjo the TFT channel is entirely exposed on at least one side as it is not covered by any signal line. Claim 1 cannot be anticipated or otherwise rendered unpatentable by Dohjo.

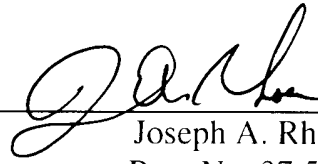
Claim 9 requires that "a region of a semiconductor film for the transistor that is entirely covered by the signal wiring and which is at least partially covered by the gate wiring serves as at least part of a channel region of the thin film transistor." Thus, claim 9 requires that a TFT channel be entirely covered on one side by the signal wiring, and at least partially covered on the same side or the opposite side by at least part of the gate wiring. Again, Dohjo fails to disclose or suggest this aspect of claim 9. In Dohjo, the TFT channels are not covered by signal lines 110.

For at least the foregoing reasons, it is respectfully requested that all rejections be withdrawn. All claims are in condition for allowance. If any minor matter remains to be resolved, the Examiner is invited to telephone the undersigned with regard to the same.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____



Joseph A. Rhoa
Reg. No. 37,515

JAR:caj
1100 North Glebe Road, 8th Floor
Arlington, VA 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

1. (Amended) A transmission type liquid crystal display device
[including]comprising on a transparent substrate a gate wiring, a signal wiring
perpendicular to the gate wiring, an auxiliary capacitance wiring that is generally parallel
to the gate wiring and perpendicular to the signal wiring, a thin film transistor having
either one of a source region and a drain region electrically connected to the signal
wiring, and a pixel electrode to which the other one of the source region and the drain
region of the thin film transistor is electrically connected via a lead electrode, wherein
the signal wiring, the gate wiring, the auxiliary capacitance wiring and the lead
electrode are made of [a] light shading material(s),

a semiconductor thin film is formed for [each] a pixel electrode below and so as to
be entirely covered by respective parts of the signal wiring, the gate wiring, the auxiliary
capacitance wiring and the lead electrode [via insulating film],

a region [that belongs to] of the semiconductor thin film [and is] located below
and entirely covered by the signal wiring and below and at least partially covered by the
gate wiring [is made to] serve as a channel region of the thin film transistor, regions
[that belong to] of the semiconductor thin film [and are] located on both sides of the
channel region below the signal wiring [are made to] serve as a source region and a drain
region of the thin film transistor respectively, and a region [that belongs to] of the

semiconductor thin film [and is] located below the auxiliary capacitance wiring [is made to] serves as an auxiliary capacitance electrode region.

5. (Amended) A transmission type liquid crystal display device as claimed in claim 1, further comprising:

a first contact hole for electrically connecting either one of the source region and the drain region of the semiconductor thin film to the signal wiring, a second contact hole for electrically connecting to the lead electrode an auxiliary capacitance electrode region lead to the other one of the source region and the drain region of the semiconductor thin film[to the lead electrode], and a third contact hole for electrically connecting the lead electrode to the pixel electrode[,

the signal wiring being electrically connected to the pixel electrode via the first contact hole, the source region, the channel region, the drain region, and the auxiliary capacitance electrode region of the semiconductor thin film, the second contact hole, the lead electrode and the third contact hole].

6. (Amended) A transmission type liquid crystal display device as claimed in claim 1, wherein

[the] a gate electrode of the transistor and the auxiliary capacitance wiring are made of [a] the same material.

Please add the following new claims:

9. (New) A liquid crystal display device which uses at least transmissive light to display images, the liquid crystal display comprising:

a gate wiring, a signal wiring perpendicular to the gate wiring, an auxiliary capacitance wiring that is generally parallel to the gate wiring and perpendicular to the signal wiring, a thin film transistor having either one of a source region and a drain region electrically connected to the signal wiring, and a pixel electrode to which the other one of the source region and the drain region of the thin film transistor is electrically connected via a lead electrode;

wherein the signal wiring, the gate wiring, the auxiliary capacitance wiring and the lead electrode are opaque so as to shade light; and

wherein a region of a semiconductor film for the transistor that is entirely covered by the signal wiring and which is at least partially covered by the gate wiring serves as at least part of a channel region of the thin film transistor.

10. (New) The display of claim 9, wherein respective regions of the semiconductor film located on both sides of the channel region below and covered by the signal wiring serve as a source region and a drain region of the thin film transistor.

11. (New) The display of claim 10, wherein a region of the semiconductor film located below and covered by the auxiliary capacitance wiring serves as an auxiliary capacitance region.

12. (New) The display of claim 9, wherein the semiconductor film is entirely covered by respective parts of the signal wiring, the gate wiring, the auxiliary capacitance wiring and the lead electrode.